

Install Electronic Flare Ignition Devices



Partner Reported Opportunities (PROs)
for Reducing Methane Emissions

PRO Fact Sheet No. 303

Applicable sector(s):

Production Processing Transmission and Distribution

Partners reporting this PRO: Chevron U.S.A. Production Company (now ChevronTexaco Corporation)

Other related PROs: Install Flares, Install BASO® Valves

Compressors/Engines	<input type="checkbox"/>
Dehydrators	<input type="checkbox"/>
Pipelines	<input type="checkbox"/>
Pneumatics/Controls	<input checked="" type="checkbox"/>
Tanks	<input type="checkbox"/>
Valves	<input type="checkbox"/>
Wells	<input type="checkbox"/>
Other	<input type="checkbox"/>

Technology/Practice Overview

Description

Flares are used to safely dispose of combustible gas and avoid releasing it to the atmosphere. Some flares have one or more continuously burning pilot flames, while others save gas by only igniting pilot flames in preparation for use. Pilots can be blown out by wind and gas leakage and/or waste gas is occasionally released to an unlit flare. Both of these situations result in methane, volatile organic compounds (VOC) and hazardous air pollutant (HAP) emissions to the atmosphere.

This technology replaces the intermittently or continuously burning flare pilots with electrical sparking pilots similar to a modern gas stove. These sparking pilots require low electrical power that can be supplied from a battery with solar recharge in remote sites. In addition to using electronic flare ignition devices for pilots, facilities may also install sensors to detect the pilot flame and shut off fuel gas if the pilot is extinguished.

Operating Requirements

A low amperage electrical power supply is required, such as solar recharged batteries.

Applicability

This technology can be applied to all pilot flame ignition systems, including flares and heaters.

Methane Emissions Reductions

Methane emissions occur from leaking or venting un-combusted natural gas through an unlit flare. Leakage may occur through emergency relief valves and blowdown valves connected to a flare. Venting occurs when flare pilot flames are occasionally blown out by high winds, causing release of methane at 70 scf per hour per pilot until they are relit or shut off.

Methane Savings: 1.68 Mcf per year

Costs

Capital Costs (including installation)

<\$1,000 \$1,000 – \$10,000 >\$10,000

Operating and Maintenance Costs (annual)

<\$100 \$100-\$1,000 >\$1,000

Payback (Years)

0-1 1-3 3-10 >10

Benefits

Reducing methane emissions was an associated benefit of the project.

Economic Analysis

Basis for Costs and Savings

Methane emissions reductions of 1.68 Mcf per year apply to the installation of one electronic ignition device replacing a single pilot that is blown out for 24 hours per year.

Discussion

This technology can pay back in less than three years. The primary economic justification is the savings of natural gas burned in flare pilots, and not in the reduction of natural gas released through unlit pilots or flares. The gas savings associated with converting a continuous burning pilot to an electronic ignition are, on average, 70 scf per hour per pilot. An associated benefit is a reduction in VOC and HAP emissions.